

ABSTRACT OF THE DISCLOSURE

5 A 3D image acquisition apparatus comprises a  
pattern projection section which projects a pattern on  
an object to be measured, an imaging section which is  
disposed at a distance from the pattern projection  
section and images the object on which the pattern has  
been projected, and a depth calculation section which  
detects the projection pattern projected on the object  
on the basis of an image acquired by the imaging  
10 section, collates the detected pattern and the  
projected pattern, and calculates a depth of respective  
parts of the object on the basis of the correspondency  
of the collation. The projected pattern is stripes/  
matrix formed by alternately arranging areas with local  
15 maximum/minimum luminance values. Thus, stripes/matrix  
boundaries can be exactly extracted from the pattern  
projection image, and correct decoding is performed  
from the encoded projection image even where the object  
is not a white-based color one or a low-saturation  
20 color one.